

Efi Arazi School of Computer Science

B.Sc. in Computer Science

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A great deal of effort has been expended in preparing this handbook, in order to ensure that its content is complete and accurate. However, changes and alterations to the information are possible. The IDC Herzliya Academic Authorities may cancel, alter or add courses and/or specialization programs, and generate changes in the times of lectures or in the assigned lecturer. Such changes will be published over the course of the year by various means, such as the online handbook on the IDC Herzliya website, and will apply to all IDC Herzliya students, including students of the Raphael Recanati International School, unless specified otherwise.

Introduction

The curriculum of the undergraduate degree (B.Sc.) in Computer Science includes:

- 17 mandatory and elective courses in Computer Science
- 7 mandatory courses in Mathematics
- 2 English courses
- 4 Business administration or Entrepreneurship courses
- 4 general elective courses
- A Business Administration or an Entrepreneurship cluster

First Year

First-year students are required to take basic courses in Computer Science, Mathematics, and English. This year is dedicated to mandatory courses only, comprising 48 credits (including English courses).

Second Year

Second-year students are required to take mandatory courses in Computer Science, as well as a Business Administration or Entrepreneurship cluster. Students are also required to take one Computer Science elective course. This year comprises 44 credits.

Third year

Third-year students are required to complete their mandatory Computer Science and English requirements, and take additional Computer Science elective courses. This year comprises 26 semester hours.

In addition to the above, each student is required to take general elective courses comprising 8 credits throughout their studies, to expand their general knowledge.

Students may choose general elective courses out of all courses offered on campus, provided that the courses are available and that the students meet their prerequisites. Registration for cross-campus courses will be done by applying to the Student Administration during the registration period

Overall, the B.Sc. students are required to complete 126 credits.

Program of Studies

First Year

Course Code	Course Name	Lecture Hours	Recitation Hours	Total Credit Points	Prerequisites	Final Course Assignment
Fall Semester Courses						
52	Calculus I Dr. Yossi Shamai	4	2	6		Exam
54	Linear Algebra I Dr. Avner Halevy	4	2	6		Exam
56	Discrete Mathematics Dr. Elette Boyle	3	2	5		Exam
417	Introduction to Computer Science Prof. Shimon Schocken	4	2	6		Exam
3111	English for CS Advanced 1 Ms. Rebecca Haddad	3		0		Exam
110	English for CS Advanced 2 Dr. Miriam Symon	3		2		Exam
Spring Semester Courses						
53	Calculus II Dr. Yossi Shamai	3	2	5	Calculus I	Exam
55	Linear Algebra II Dr. Avner Halevy	3	2	5	Linear Algebra I	Exam
59	Data Structures Dr. Gail Gilboa	3	2	5	Int. to CS	Exam
69	Logic and Set Theory Dr. Elette Boyle	3	2	5	Discrete Math	Exam
3144	System Programming in C Dr. Jessica Cauchard	3		3	Intro. to CS Data Structures (simultaneously)	Exam
110	English for CS Advanced 2 Ms. Rebecca Haddad	3		2	English for CS Advanced 1	Exam
Total Credits				48		

In addition to the mandatory courses, all CS students are required to take 8 credits of General Elective Courses during the course of their studies. The courses can be chosen out of all courses offered on campus, provided that the courses are available and that the students meet their prerequisites.

Second Year

Course Code	Course Name	Lecture Hours	Recitation Hours	Total Credit Points	Prerequisites	Final Course Assignment
Fall Semester Courses						
77	Algorithms Prof. Tami Tamir	3	2	5	Discrete Math Data Structures Logic and Set Theory	Exam
79	Digital Architectures Dr. Danny Seidner	3	2	4	Int. to CS, Discrete Mathematics	Exam
109	Introduction To Probability TBA	3	2	4	Discrete Math Calculus I	Exam
3030	Advanced Programming Mr. Amir Amit	3	1	4	Int. to CS	Exam
Spring Semester Courses						
80	Functional And Logic Programming Ms. Sara Geizhals	3	1	4	Int. to CS Data Structures	Exam
84	Operating Systems Mr. Omer kochba	3	1	4	Data Structures Digital Architectures System Programming in C	Exam
3141	Machine Learning from Data Dr. Zohar Yakhini	3	2	4	Calculus I, II Algebra I, II Algorithms Int. to Probability	Exam

Cluster

As part of the Computer Science program, all students are required to choose between two clusters: Business Administration and Entrepreneurship

Business Administration Cluster

Fall Semester Courses

76	Business Law Adv. Joel Slawotsky	3		3		Exam
152	Introduction to Microeconomics Dr. Carolina Silva	3		3		Exam

Spring Semester Courses

81	Principles of Marketing Management Dr. Hagit Perry	3		3	Int. to Micro.	Exam
89	Fundamentals of Finance Mr. Erez Levy	3		3		Exam

Course Code	Course Name	Lecture Hours	Recitation Hours	Total Credit Points	Prerequisites	Final Course Assignment
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Entrepreneurs Cluster

Fall Semester Courses

2350	Ideation and Creativity Dr. Gali Einav	2		2		Paper
2351	Business Models and Strategy for Entrepreneurs Dr. Gali Einav	2		2		Paper
2312	Product Design and User Experience Mr. Ronel Mor	2		2		Paper

Spring Semester Courses

2282	Economic and Legal Aspects for Entrepreneurs Mr. Daniel Pomerantz	2		2		Paper
2284	Final Project: Venture Creation Dr. Gali Einav	4		4		Project

Computer Science Elective Courses¹

Please choose one Computer Science elective course.

Prerequisites for each Computer Science elective course are a passing grade in all of the first year mandatory courses in CS and Mathematics, in addition to the specific prerequisites of each course, as detailed below:

Fall Semester Courses

3154	HCI Design workshop Dr. Jessica Cauchard	3		3		Paper
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Spring Semester Courses

287	Digital Systems Construction● Mr. Eytan Lifshitz	3		3		Exam
3125	Object Oriented Programming with C# and .NET Mr. Guy Ronen	3		3		Middle Semester Exam (date will be published)
3128	Build Your Own Computer Dr. Danny Seidner	3		3	Digital Architectures	Paper

¹ The above courses are offered in English. Students are welcome to choose a course offered in Hebrew, as detailed in the handbook of the Hebrew program.

3153	Virtual Reality Development Mr. Amir Yatziv	3	3		Paper
3564	Information Retrieval and Web Search• Dr. Inbal Budowski-Tal	3	3	Algorithms	Exam
3590	Numerical Analysis•• Dr. Yossi Shamaï	3	3		Exam

Total Credits**44**

- This course is part of the M.Sc. curriculum
- This course is part of the M.Sc. curriculum, and is open for B.Sc. students with a total GPA of 75 and above.

In addition to the mandatory courses, all CS students are required to take 8 credits of General Elective Courses during the course of their studies. The courses can be chosen out of all courses offered on campus, provided that the courses are available and that the students meet their prerequisites.

Third Year

Course Code	Course Name	Lecture Hours	Recitation Hours	Total Credit Points	Prerequisites	Final Course Assignment
Fall Semester Courses						
592	Computer Networks Dr. Yaniv.Ben-Itzhak	3	1	4	Algorithms Operating Systems	Exam
643	Automata And Formal Languages Prof. Yacov Hel-Or	3		4	Mathematics 1 st year courses Algorithms	Exam
Spring Semester Courses						
644	Computability and Complexity Dr. Shay Mozes	3	1	4	Automata And Formal Languages	Exam
164	Introduction to Computer Graphics Prof. Ariel Shamir	3	1	4	Algorithms	Exam
282	English for CS – Presentations ♦ Mr. Barry Katz	3		1		Presentation

Computer Science Elective Courses¹

Please choose three Computer Science elective courses.

Prerequisites for each Computer Science elective course are a passing grade in all of the first year mandatory courses in CS and Mathematics, in addition to the specific prerequisites of each course, as detailed below:

Annual Courses

196	Guided Field Project in Computer Science ▲ Faculty Staff	5		5	1 st year courses and Guidance approval	Project
197	Research Project ▲ Faculty Staff	5		5	2 nd year courses Honors Students	Project

Fall Semester Courses

3119	Guided Project Faculty Staff	3		3	1 st year courses and Guidance approval	Project
3126	Game Intelligence Dr. Uri Globus	3		3		Project
3154	HCI Design Workshop Dr. Jessica Cauchard	3		3		
3559	Coding Theory●● Dr. Elette Boil	3		3	Algorithms	Exam

¹ The above courses are offered in English. Students are welcome to choose a course offered in Hebrew, as detailed in the handbook of the Hebrew program.

Spring Semester Courses

287	Digital Systems Construction Mr. Eytan Lifshitz	3	3		Exam
3125	Object Oriented Programming with C# and .NET Mr. Guy Ronen	3	3		Middle Semester Exam (date will be published)
3128	Build your Own Computer Dr. Danny Seidner	3	3	Digital Architectures	Paper
3153	Virtual Reality Development Mr. Amir Yatziv	3	3		Paper
3564	Information Retrieval and Web Search• Dr. Inbal Budowski-Tal	3	3	Algorithms	Exam
3590	Numerical Analysis•• Dr. Yossi Shamai	3	3		Exam

Total Credits**26**

- ◆ Intensive course. The specific dates will be published on the course website.
- ▲ For 3rd year students only. The courses are on a personal guidance basis and are spread over the entire academic year. Students who are interested may choose one of the courses.
- This course is part of the M.Sc. curriculum
- This course is part of the M.Sc. curriculum, and is open for B.Sc. students with a total GPA of 75 and above.
- This course is part of the M.Sc. curriculum, and is open for B.Sc. students with a total GPA of 80 and above.

In addition to the mandatory courses, all CS students are required to take 8 credits of General Elective Courses during the course of their studies. The courses can be chosen out of all courses offered on campus, provided that the courses are available and that the students meet their prerequisites.

Exam Schedule

The dates of the examinations can be found on the IDC Herzliya website under Students > Student Information > Course Catalog, Student Regulations and Syllabus > Search Exams

A personal examinations schedule is published at the Student's Information website (My IDC).